

## **Challenges for electronic invoicing systems: A quantitative study of Vietnamese SMEs**

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<p>Alongside the traditional paper invoice, there is another type of invoice that has been around for over a decade but is less popular and less known to firms – the electronic invoice. Today, the e-invoice has gained the attention of many countries in, for example the EU, and Latin America, owing to its major cost saving and increased productivity benefits. In Vietnam, there have been regulations on e-invoices but firms do not show much interest in the system. So far, there have not been any studies about e-invoices in Vietnam and there is thus a great need to carry out a research that could give benefits to all involved parties and to promote the use of the e-invoicing system.</p> <p>This thesis is a quantitative study, aiming to investigate the current barriers, from Vietnamese SME perspectives, of implementing the e-invoice system. Furthermore, the study also provides an answer to the reasons for long-term use of paper invoice. Companies' future plans regarding e-invoice are also considered. The thesis is divided into 3 parts: theoretical framework, methodology and results.</p> <p>In general, e-invoices are not popular in Vietnamese SMEs. The adoption rate is low and respondents have relatively little knowledge about the system. Moreover, there are certain barriers to e-invoices, most notably the lack of IT capability, extra investments needed and the paper invoice itself. These factors must be tackled effectively by all the involved parties, in order to increase e-invoice popularity amongst Vietnamese firms, especially SMEs. The future of the e-invoice in Vietnam seems undetermined, since the majority of firms are reluctant to adopt the system in the near future.</p>	
<p><b>Keywords</b> Paper invoice, e-invoice, Vietnam, SMEs, challenges, benefits, future plan</p>	

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# 1 Introduction

In today's globalized world, companies are fiercely competing with each other, regardless of sizes and locations. There are strong needs for process automation to gain competitive advantage in cost and productivity, as Moudry (2012) argues:

"Today's economic reality is that of increased competition, better informed and demanding customers, and relentless pressure to cut costs. Companies are being asked to do more with less. Improving processes has become a top priority for all types of businesses."

One of the process automation practices in firms is the use of the electronic invoice. This method of invoicing eliminates intermediary activities from the point of issuing to receiving and inputting invoices into the company's accounting system. Furthermore, many academic researches have pointed out the massive saving potential of the e-invoice, as compared to its paper format. Billentis (2012, 8-13), a specialized consulting company in electronic invoicing and billing, has estimated the amount of invoices to reach 350 billion in 2012 globally. 5% of which is in the electronic format, and the saving potential per electronic invoice is to be between 4-12 Euros. Thus, the system preserves businesses billion of Euros. However, the current proportion of the e-invoice is minor compared to its paper version and the benefits are not fully utilized.

Migration from the paper to electronic invoice has been on the agenda of major juridical bodies, most notably the Europe Institutions, and it has provoked attentions and supports from many countries. Nordic countries, including Norway, Denmark, Sweden and Finland, are the leaders in implementing the e-invoice system. Latin America countries, namely Brazil, Chile and Mexico, are also the pioneers in this industry, owing to the stringent legal requirements and a strong role that these governments play. (Billentis 2012, 8.)

Other nations have given instructions on using the electronic invoice in business transactions; one of them is Vietnam. In 2010, Vietnam government established decree no. 51/2010/NĐ-CP, which officially acknowledged the use of the electronic invoice in transactions. However, this decree provides no specific guidelines on how company can proceed from the paper to e-invoice and it only serves as a memorandum for future regulations. Then, on March 2011, the Ministry of Finance of Vietnam issued circular no. 32/2011/TT-BTC, which instructs Vietnamese firms on printing, issuing, using and managing the e-invoice in selling goods and providing services. According to this document, firms must satisfy certain conditions for using the electronic invoice and the invoice must include contents required by the authority for administrative purposes. This circular, which came into force in May 2011, is a full supplement for the previous decree and is a significant improvement in government's procedures in Vietnam.

Despite having clear regulations on the issue, Vietnamese firms, especially small and medium sized, hold skeptical views. They are reluctant to adopt the new system, and they see it as imposing more costs and being too risky. There are few pioneers in using electronic invoice; and those are mainly big firms in the financial, telecommunication and electricity industry, for example, Vietnam Airlines, Vietnam Posts and Telecommunications Group, and Ho Chi Minh City Power Corporation.

These facts call for a research on "why small and medium sized enterprises in Vietnam are in favor of paper invoice" and "what they find most difficult when implement or trying to implement e-invoicing system". To have a general and accurate view on the problem, this study employs quantitative method for assessing SMEs in Vietnam. There are few reasons for the choice of Vietnamese firms as the investigated subject of this thesis. Firstly, there have not been many studies conducted about the e-invoicing



system in Vietnam, except for few news articles, government circulars and decrees. The situation is vague and thus, this thesis is expected to unveil and to set a foundation for future study in this area. Secondly, as a Vietnamese, I hope to contribute my little effort to promote the use of the e-invoice in Vietnamese firms, since the benefits associated with this system are big.

### **1.1 Research objectives**

The purpose of this study is to provide an answer to the following question: “What are the challenges for Vietnamese SMEs to adopt electronic invoicing system?” To thoroughly examine the problem, three steps are carried out.

Firstly, Vietnam regulations regarding the use of the electronic invoice are collected and studied throughout literature reviews. The information includes the approval of the e-billing in business transaction of the government and instructions for companies on how to establish an electronic version of invoice.

Secondly, interviews with two Finnish firms are conducted to understand their perspectives on the following issues:

- Key drivers and benefits for using electronic invoicing system
- Main reasons for long-term using paper invoice, instead of electronic format
- Challenges that firms might face when implementing the electronic billing system.

Interviews with Finnish operators are conducted because Finland is a leading country in e-invoicing implementation. Besides, the interviewees have been working in this industry for long. Thus, they have a deep understanding and experiences and surely would provide valuable point of views on the thesis topic.

Thirdly, information gathered in the interviews, together with those from literature review, serves to form survey questionnaire that will be spread to Vietnamese SMEs. This primary data is the main source of information throughout the research. Finally, results, obtained from the survey, will then be analyzed to answer the question that has been defined at the outset of the study.

## **1.2 Research questions**

To achieve the goal set out in chapter 1.1, four research questions are set forth:

1. What are the reasons for SMEs to continue using paper invoice?
2. What are the perceived challenges to implement e-invoicing system?
3. What are the benefits that e-invoicing system brings back to companies that have implemented?
4. What is company's plan regarding electronic invoice in the next five years?

The above research questions will be answered mainly based on the primary data gathered by the survey, which is spread out to Vietnamese firms.

## **1.3 Demarcation**

This thesis concerns only the challenges for adopting the electronic invoice, and serves to communicate and to encourage the use of the e-billing system in the future. It has no aspect involved in instructing how to implement effectively in businesses. Objectives other than those cited in chapter 1.2 are thus beyond the scope of the research and should be answered separately in other studies.

As mentioned in the previous section, the electronic invoice in Vietnam is currently at an early stage. Thus, it would be interesting to do research on how firms perceive this

system. According to Vietnam General Statistics Office (2012), there are a total of 541,103 legally registered companies, of all sizes and industries, nationwide, up to 2012. Thus, it would be suitable for the researcher, as well as the outcome of the study, to narrow the scope to small and medium sized enterprises. This enables the research to focus on a specific target group and to avoid excessive effort of collecting and analyzing data, which would be beyond the requirements for a bachelor thesis.

As stated in circular no. 32/2011/TT-BTC of March, 14<sup>th</sup> 2011, Vietnam government mandates that the electronic invoice must be input, created, sent, received, archived and processed electronically, on the computers of both the sellers and buyers. Furthermore, it also states that the invoices, which are created on paper basis, but then processed and sent by electronic transferring method, are not considered electronic invoices. Hence, within this research, the **unstructured invoice format**, such as pdf, text or jpeg, is not considered as the electronic invoice. The term “electronic invoice” is referred to only the structured, fully automated invoice, as described in **section 2.2.1**.

#### **1.4 Key concepts**

There is a list of key concepts that would facilitate the understanding of the research. They will be briefly described in this section and further elaborated in the theory framework chapter.

**Small and medium sized enterprises (SMEs)**, as defined by OECD (2005, 17), are “non-subsidary, independent firms which employs fewer than a given number of employees”. That standard is set by the government or responsible governmental institutions and it varies from one country to another. In Vietnam, according to Decree no. 56/2009/NĐ-CP of 30 June 2009, criteria for SMEs are as followed:

Table 1. Vietnamese criteria for SMEs, based on number of employees.

Type	Number of employees
Micro firm	Less than 10
Small firm	From 10 to 200
Medium sized firm	From 200 to 300

**Invoice:** indicates “the itemized bill of goods sold or services provided, containing individual prices, the total charge and the terms” (Dictionary.com, 2013). The content of a typical business invoice does not only include the above information but also other requirements from the government and involved parties.

**Electronic invoice:** as stated in Vietnam’s decree no. 51/2010/NĐ-CP, the electronic invoice is created and processed on the computer systems of the buyers and sellers, who have already been granted specific tax codes, and it must be stored electronically on the systems of both parties. The electronic format of invoice eliminates physical delivery method, as compared to its paper version. Thus, the term “electronic invoice” refers to as the “structured invoice document”, which will be explained in more details in section 2.2.1.

Within this research, the following terms: electronic invoice, e-invoice, electronic bill, and e-bill are interchangeable and they convey the same meaning as the digital version of invoices.

**Operator:** In this research, the operator refers to a third party providing electronic invoicing service. In a business transaction, which involves in using electronic invoice, the operator’s presence depends on the agreed transferring method.

## 2 Invoice

This chapter of the thesis discusses the theory related to the invoices in both formats: the paper invoice and the electronic invoice. I will proceed by explaining the paper invoice first, and then the e-invoice section.

### 2.1 Paper invoice

Invoice, as defined by Oxford Dictionaries, is “a list of goods sent or services provided, with a statement of the sum due for these”. Depending on legal requirements of different countries, the content of the invoice differs. According to Vietnam’s decree no. 51/2010/NĐ-CP, a legally accepted invoice should include the followings:

- issue date
- name, notation and sequential number of the invoice; for invoices, which are printed by the third party, name of the third party should be clearly cited
- name, address and tax ID of the seller
- name, address and tax ID of the buyer
- name of products or services
- unit in calculation
- quantity and price of goods and/or services
- total price without VAT
- VAT rate, and amount of payable VAT tax
- total price to be paid, signatures of the seller and buyer, seal of the seller (if applicable).

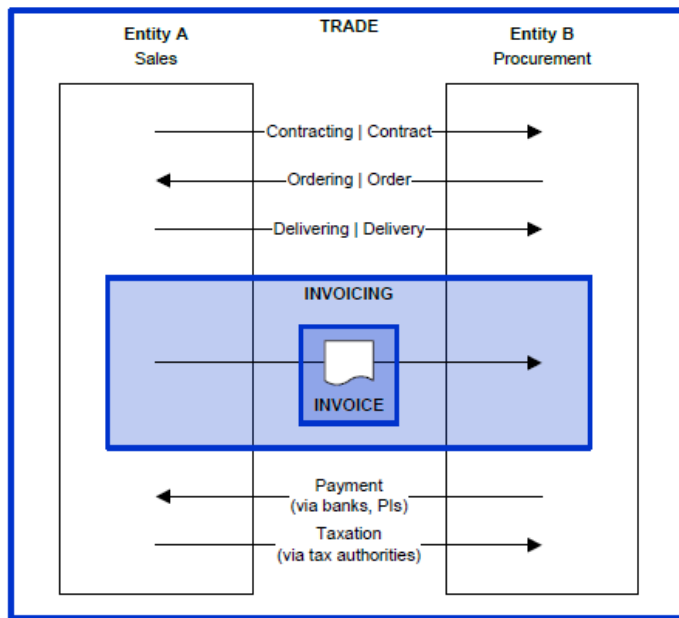


Figure 1. A typical trade process. (Innopay 2010, 12)

Figure 1 depicts a typical trade process, which encompasses a variety of activities between 2 parties. In the traditional invoicing process, invoices are exchanged either on the delivery of goods, or by mail or by physical handover to customers, as illustrates in figure 2.

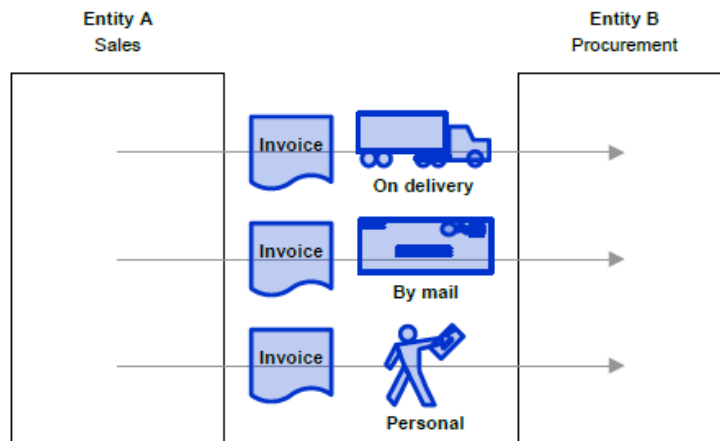


Figure 2. Distribution of invoices. (Innopay 2010, 14)

The drawbacks of this invoicing delivery are mainly in time and cost. As the paper is manually handled, which is a labor intensive task and is prone to errors, it gives rise to delays and unexpected shortcomings. In case such events happen, it results in a higher cost to the business. Besides, it takes time for a paper invoice to reach its destination. With trade terms predefined in the contract, for example 60 days net payment, the actual payment period lasts longer than that. This, in turn, increases payment period, decreases net working capital of the seller and “generates costs in term of interest and discount forgone” (InnoPAY 2010, 15.)

The digitalization and automation of the invoicing process, which lead to the term the electronic invoice, increase the integration between all systems in the supply chain and accounting departments, which could potentially eliminate the drawbacks of the traditional paper bills. Furthermore, the digital format also frees up labor resources, which are often found scarce in SMEs, to do more productive and value-added tasks. (Harald 2009, 14; EBA & Innopay 2010, 20-24.)

## **2.2 Reasons for paper invoices to exist**

There have been many studies promoting the superiority of the electronic invoice over the paper one; however, only a few look into main reasons why the paper invoice still persists. The debate whether or not to change the current invoicing habits in firms has been reflected by a wide range of newspapers in Vietnam.

According to Vietnam Investment Review (2012), one of the main reasons why the paper invoice is more favorable is that the technology capabilities of Vietnamese firms are insufficient. An electronic invoicing system requires companies to invest in their technology infrastructure and storage system, to possess an electronic planning system or similar software, and to have computers connected to the Internet. Such additional

investments associated with the electronic invoice makes the prospect of using it less attractive, especially for SMEs.

Thanhvien Online (2012), in its latest research about the electronic invoicing system, cited a statement from a Tax official addressing tax fraud as a potential challenge. According to this source, using the electronic invoice, instead of the paper version, would prevent companies from attempting tax evasion or manipulating financial statements for tax purposes.

Furthermore, the adoption of the electronic invoicing system in SMEs depends significantly on the volume of invoices that firms use each month, according to this official. As companies issue more invoices, the more likely they would experience the benefit of switching to the electronic system. Thus, for SMEs, especially those that have few invoices per month, the paper invoices are more preferable.



## 2.3 Electronic invoice

This section discusses theory related to the electronic invoices. I will start by explaining the concept of the e-invoice, and how firms can benefit from using this system. In the subsequent part, I will reflect on what might bar the way for market adoption of the e-invoice.

### 2.3.1 Types of e-invoice

The European Commission defines the electronic invoice as “[an] electronic transfer of invoicing information (billing and payment) between business partners (supplier and buyer). It is an essential part of an efficient financial supply chain and it links the internal processes of enterprises to the payment systems”. The electronic invoice is divided into two categories, which differ in term of how it is created and how deep it integrates into the system. They are unstructured and structured invoice documents.

**The unstructured invoice document** is the simplest form of the electronic invoice, in which the seller of products or services, instead of printing and sending an invoice, accumulates all required data into the electronic document, for instance: PDF, Text, and JPEG, and then sends it through either email or other internet transferring methods. On the other side, the receiver still has to manually read and enter the invoice into his/her system. This type of e-invoice eliminates the printing, postal delivering and opening compared to the traditional bill. (EBA and Innopay 2010, 17.)

**The structured invoice document** refers to a fully automated process. All the needed information is compiled into a predefined, agreed-upon electronic structured document, which is both known to all involved parties, such as XML and EDIFACT. This

invoice document effectively eliminates all the processes as in the unstructured one, and goes directly into the receiver's system, which results in higher saving potential and benefits. More advantages of this invoicing method will be discussed further in section 2.2.3. (EBA and Innopay 2010, 17.)

### 2.3.2 Paper versus E-invoicing process

Let us consider the following traditional invoicing process.

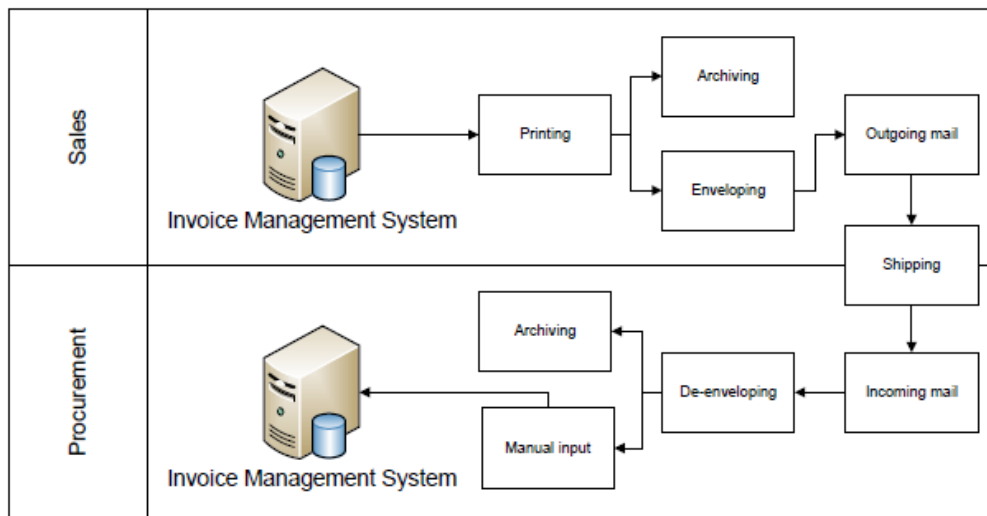


Figure 3. Traditional invoicing process. (Myllynen 2011, 9).

The graph depicts a range of activities from the point of issuing invoice to inputting the received bill into the buyer's system, such as printing, enveloping, archiving, delivering, de-enveloping, and entering data. This cycle repeats for every invoice received and sent. Those tasks are highly labor-intensive and susceptible to errors and delays and they strongly hinder the productivity, since they create little value to the core business of firms (EBA & Innopay 2010, 15). A study by PayStream (2010, 2) found out that an average time to process the paper invoice, from the date of receipt to the date of approval, which is on the receiver's side alone, is 23 days. Emanating from the needs of

simplification and automation of the invoicing process, the electronic bill offers an effective solution. Its processes are described in figure 4.

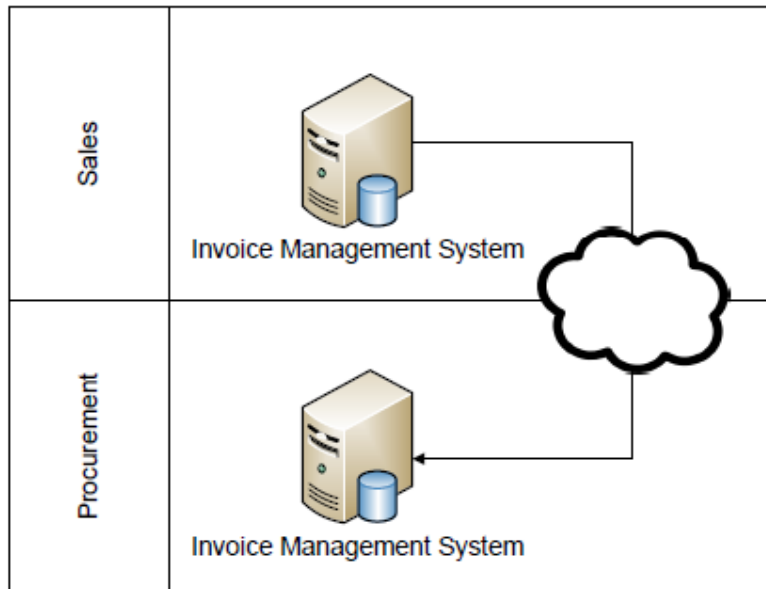


Figure 4. Electronic invoicing process. (Myllynen 2011, 9).

This solution eliminates most of the intermediate activities as compared to the traditional one and it highly integrates into the seller and buyer's system. The cloud symbol represents the method that generates and transfers electronic invoice. It can either be through an EDI (Electronic Data Interchange) or can be executed by a third-party contractor. The more automated the process is, which is from the unstructured format to the structured one, the more time and costs it can save for businesses (Billentis 2012, 13). The next subsection will look into benefits of electronically exchanging of invoices.

### 2.3.3 Benefits of e-invoices

Many researchers have conducted studies about benefits of the electronic invoice in enterprises. Harald (2009, 14) and EBA & Innopay (2010, 20-24) conclude that this

system will improve companies' performance in term of cost saving, competitiveness, productivity, improved cash flow and environmental impact.

Changing from the paper to electronic invoice will surely preserve businesses an enormous amount of money, which results in an elimination of manual work, material and transportation costs. According to Billentis (2012, 13-14), the **saving potential** for per incoming and outgoing invoice in Finland ranges from 6 euros to 11 euros, an equivalent to 50 to 60% of paper invoice costs. In Vietnam, with its economy's size and price level, the saving would be less than Billentis' calculation but the total benefit would still be gigantic.

Firms can gain **competitiveness** for implementing the electronic invoicing system by improving productivity and customer satisfaction. The former is due to the digitalization and automation of processes while the latter is owing to the fact that there will be fewer errors and disputes related to invoicing issues. (Harald 2009, 14.)

The e-invoice enables companies to **better allocate their human resources** to a higher value-added and knowledge-based activities. According to Turunen (2012), the Development Director of Tieto, this is of extreme importance to SMEs, since their resources are always constrained and limited.

The automation of the invoicing process reduces the life cycle of an invoice, thus **improves cash flow** and reduces credit losses. This allows firms to effectively control its working capital and to take advantage of trade discount since the invoice is faster approved. (Harald 2009, 14; EBA & Innopay 2010, 21.)

The paper invoice consumes twice as much energy and one and a half as much carbon emissions as the electronic invoice (Tieto 2011). Migrating from the paper to electronic format helps firms be more **sustainable** and increase its corporate social responsibility.

It is worth noting that the benefits that firms would experience from adopting the electronic invoice depend on their roles in business transactions and their size. For example, an e-invoice recipient would experience higher saving potential than the issuer in a B2B transaction, due to the integration and automation of processes that allow to cut costs of handling and to take benefits of trade discounts. Furthermore, Turunen (2012) argued that the reduced processing time resulting from shifting from paper to electronic invoices is not visible to the SMEs, especially if their annual invoice volume is not so high.

#### **2.3.4 Barriers to implementation**

This subsection concerns current challenges to the implementation of the electronic invoicing systems in companies. These barriers will serve as the subject of the quantitative research in the later part of the thesis.

Of the challenges to implementation of the electronic invoice, there are a wide range of studies addressing the issue, for example: Basware (2012, 9), PayStream (2010, 6) and Harald (2009, 17-18). The author categorizes these barriers into internal and external factors. The internal factors relate to the issues originating from the firm itself, which hinders its ability to adopt e-invoicing system. The external factors, on the other hand, emanate from the outside, for example the suppliers, customers, service providers, and the government, that prevent or reduce the attractiveness of adopting the electronic invoice. The lists are presented in table 2 below.

Table 2. Barriers to electronic invoicing (Basware 2012,9; PayStream 2010, 6; Harald 2009, 17-18).

External factors	Internal factors
<p>Customer's reluctance to accept e-invoice</p> <p>Differences in invoicing channels between suppliers and customers</p> <p>Interoperability between different operators</p> <p>Lack of service providers of e-invoices</p> <p>No instructions from the government</p>	<p>Perceived difficulty to use</p> <p>Extra costs to the business</p> <p>Constrained budget</p> <p>Still want to keep the old system</p> <p>Insufficient IT infrastructure</p> <p>Lack of business capabilities</p> <p>Complex implementing process</p> <p>Worries about the reliability and security</p>

These factors will be brought to discussion in the interview with the Finnish firm executives to confirm the validity in real business practices and be refined to be included in the survey.

### 2.3.5 E-invoicing global landscape

This subsection of the research reflects the current progress of implementing the electronic invoicing system in different parts of the world. Furthermore, the prospect of this industry is also discussed. The global landscape provides audiences with an insight of the situation, in which Asia Pacific countries, in general, and Vietnam, in specific, are lagging behind other countries in this innovative business.

The very first development of the electronic invoicing system dated back in the early 1960s in the US (Hesse 2010). Surprisingly, the notion is relatively new and the industry is still in its primitive stage. However, it is getting increasingly higher attentions from the authorities and enterprises around the world. The e-invoice is now amongst the top priority in the EU agenda.

The volume of invoices worldwide, based on Billentis (2012, 29)'s estimation, is a total of 350 billion, including both the paper and electronic versions. EBA and Innopay (2010, 26)'s research has suggested that the growth of the penetration rate of the system is from 25% to 40% in different service segments. Given the early stage of the electronic invoice and the gigantic size of the traditional invoice, this industry is too attractive to be ignored.

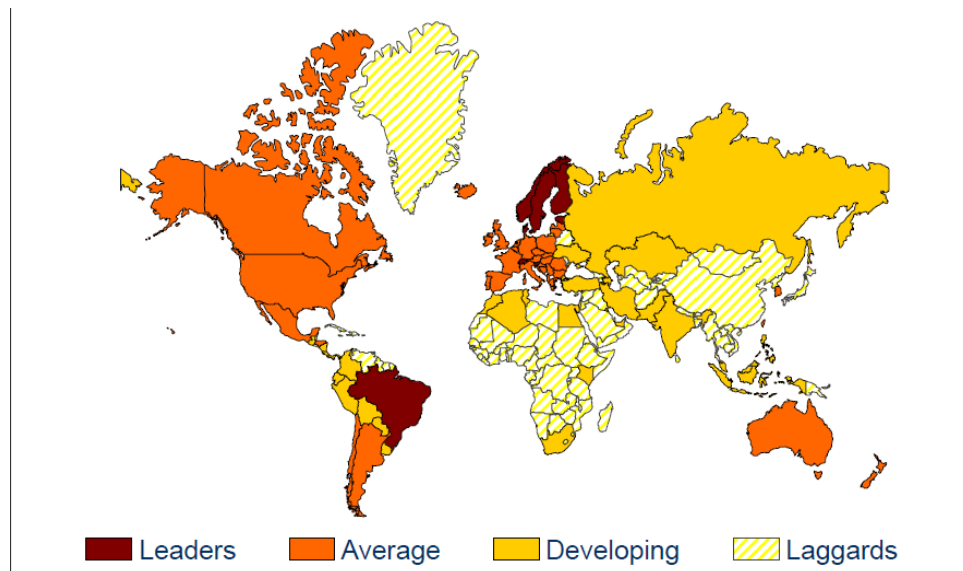


Figure 5. E-invoicing global market in B2B, B2G, G2B and B2C. (Billentis 2011).

Figure 5 represents the current progress of the digitalization of invoices worldwide in B2B (Business-to-Business), B2G (Business-to-Government), G2B (Government-to-Business) and B2C (Business-to-Customer). It is projected that Europe represents 56%

of the e-invoice market while that figures for North America and Asia Pacific are 35% and 7%, respectively. Europe also has the highest adoption rate, of between 4% and 15%, followed by North America of between 3% and 10%. (EBA & Innopay 2010, 25.)

The Nordic and Latin American countries (Brazil, Chile and Argentina) are the flagships in this industry, but their motives differ. In Europe, the European Commission, as well as its member states, is working on its legislation framework to eliminate all the possible legal barriers to implement the electronic invoice. All participants (suppliers, operators and buyers) are joining in the market on a voluntary basis but have shown strong intention on further adopting the e-invoicing system in their business. (Billentis 2012.)

Latin America, on the contrary, does not have such voluntary mindset but possesses a strong role that the governments play to facilitate the adoption of the electronic invoice in businesses. The governments in Brazil and Chile, in order to battle against tax evasion, have established strict nationwide e-invoicing standards and have mandated firms and companies to comply with these. This practice also allows firms and the tax authorities to enable real-time or near real-time audit, as in the case of Brazil. The strict regulations and the closely monitored enforcement have been extremely helpful that in Brazil, the penetration rate is now approximately 90%. The success story of these Latin America countries has inspired other countries to follow its footsteps in adopting electronic invoices. (Billentis 2012, 46.)

In most Asia-Pacific countries, the implementation of the electronic invoicing system has shown little progress. Remarkably, nations such as China and Japan, the 2<sup>nd</sup> and 3<sup>rd</sup> biggest economies, are laggards in this specific industry. In general, companies expe-



rience electronic exchanging of invoices via an internet portal or internet banking. Besides, the adoption rate and the automation level are quite low. Governments' regulations on the electronic invoice are either not available or have hardly any enforcement power. Indian and Russian authorities have made some legal changes and are moving to acknowledge the use of the e-invoice in business transactions. (Billentis 2012, 44.)

Singapore, Taiwan, Hong Kong, South Korea and Australia are the leaders in implementing the electronic invoicing system with the governments; shipping and retailing industry as key initiators. (Billentis 2012, 44.)

### **3 E-invoicing development in Vietnam**

The aim of this chapter is to present the invoicing development in Vietnam. Many stages of development and related policies are also discussed. It will start first by giving brief presentation about Vietnam in general and its economy.

#### **3.1 Vietnam at a glance**

Vietnam locates in the South East Asia, bordering Cambodia, Laos and China. The country covers an area of 331,210 sq km, roughly about the same size as Finland but its population is much larger. Up to 2011, it is estimated to have 91.5 million people, amongst which 86% is ethnic Vietnamese, making it the 13<sup>th</sup> most populated nation in the world. Vietnam is endowed with a young population structure, as the median age is 27.4 and 57% of the population is under 30. (Export.gov; IndexMundi 2013.)

According to World Bank (2013), in 2011, Vietnam GDP reached US\$ 123.6 billion, and the GDP per capita is US\$ 1,270. From the period 2004 to 2008, the annual growth rate averages at above 7% before slowing down to 5% from 2008 onward due to the global economic downturn (Trading economics 2012). Industrial sector, especially manufacturing, represents a large proportion of the country GDP with 40.8% and 19.3% in 2011, respectively. Agricultural sector still plays an important role in the economy, accounting for approximately 22% in 2011.

In recent years, the country has been the leading exporter of agricultural products, for example: rice, coffee, black pepper, tea, rubber and fishery products. Vietnam is also one of the largest crude oil producers and exporters in the South East Asia region. In

addition, the country has been growing as an attractive destination for foreign investment. (Trading economics 2012.)

According to the Vietnam General Tax Authority (2013), Vietnamese SMEs are facing big challenges in recent years, which are reflected by the increasing number of firms filed up for bankruptcy. SMEs find it hard to acquire additional capital from the bank and other financial institution. The labor skill, business and management capability is limited, which hinder the firms' ability to develop. The business environment is plagued with the weak buying power from the customers, the persistently high inflation and the government debt.

### **3.2 Electronic invoicing regulation in Vietnam**

This section of the report will deal specifically with the applicable laws and regulations concerning the use of the electronic invoice in Vietnam. By far, Vietnamese government has established a set of requirements for firms to migrate from the paper to electronic invoice and provided guidance to standardize with other current invoicing system. However, the laws have weak enforcement power and thus, not so many companies show particular interest in this system.

Harald, B. (2009) suggests in his report on the electronic invoicing system a three-pillar model denoting a framework for improving the use of this innovative system (figure 6). Although the model is based on the context of the European countries, it can also be taken as guidance for other countries, especially Vietnam, to improve the adoption of the electronic invoice.

The model encompasses three building blocks, including legal requirements which instruct firms to comply with when using the electronic invoice, interoperability between

operators and content standard guidance. It was developed upon a set of business requirements and served as a proposal and improved communication to increase the penetration of the electronic invoicing system. (Harald 2009, 19.)

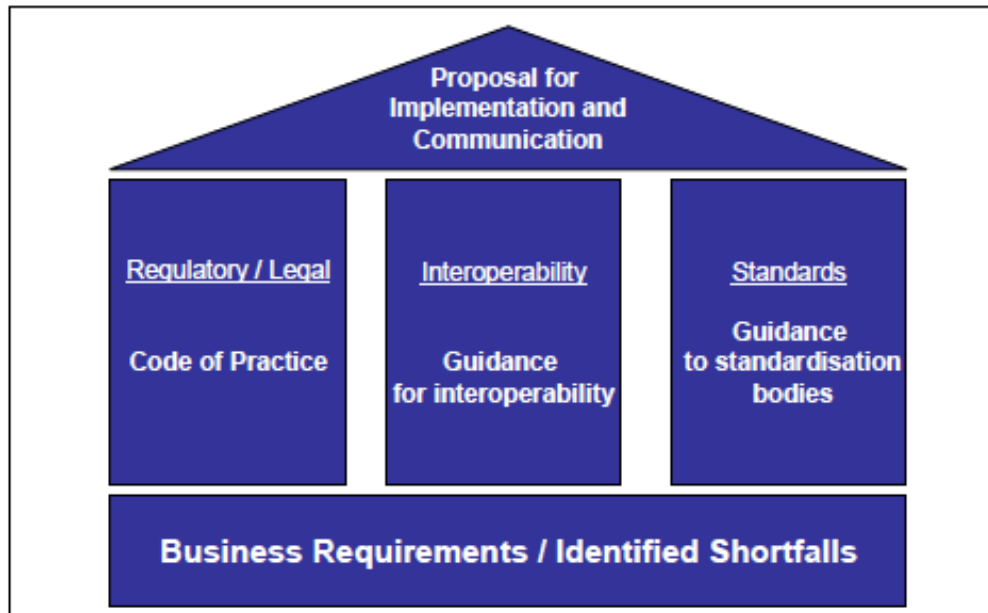


Figure 6. The content of the European e-invoicing framework. (Harald 2009, 19)

The legal and regulatory proposal aims for “a clear, simplified, harmonized and uniformly applied legal framework for e-invoicing” (Harald 2009, 29). Harald and his Expert Group specify VAT regulations are the main obstacles hindering the adoption of the electronic invoicing system. They also came to a consensus to support a new VAT directive as it eliminates distinction between the paper and electronic invoices, broadens the use of technology and reduces requirements for the authenticity and integrity in the transmission processes.

Interoperability addresses issues related to the electronic invoice operator. It seeks to create a platform to connect and reconcile different networks and solutions so that the users of each network can reach their counter parties with relative ease. In addition, it

will promote efficient and cost saving approaches in the context of the e-invoice. (Harald 2009, 37.)

The last pillar is the content standard, including the data set that makes up the message and business header of an electronic invoice (Harald 2009, 55). Today, the industry data and requirements vary from one another, which have created a fragmented market for electronic invoicing formats. As a result, no format has taken a dominant position and it will bar the way to mass market adoption. Harald and his Expert Group targets this e-invoicing content standard to have less formats and expressions and to encourage a move toward a more open and interoperable environment.

In the next section, the author will discuss about the development of regulations, concerning invoicing habits in business.

### **3.2.1 Evolution of regulations**

To fully understand the invoicing habit of Vietnamese SMEs, it would be beneficial to take a look at how the regulation concerning this issue has developed.

In 2002, the government has established decree no. 89/2002/NĐ-CP on the printing, issuing, using and managing the paper invoice. In this document, the Ministry of Finance of Vietnam was appointed as the sole provider of standardized paper invoices, which often refer to as "red invoices". Firms and individuals participating in business transactions had to register for the right to buy these invoices. This regulation created a universal use of the invoice in the country, eliminated any possible disputes related to the invoice and effectively controlled the tax payment, as every business must use and submit this paper to the tax authority. However, during the implementation of this

regulation, other issues have emerged, which include most notably decrease of productivity and the trading of the “red invoices”. (Hoabinh Online 2010.)

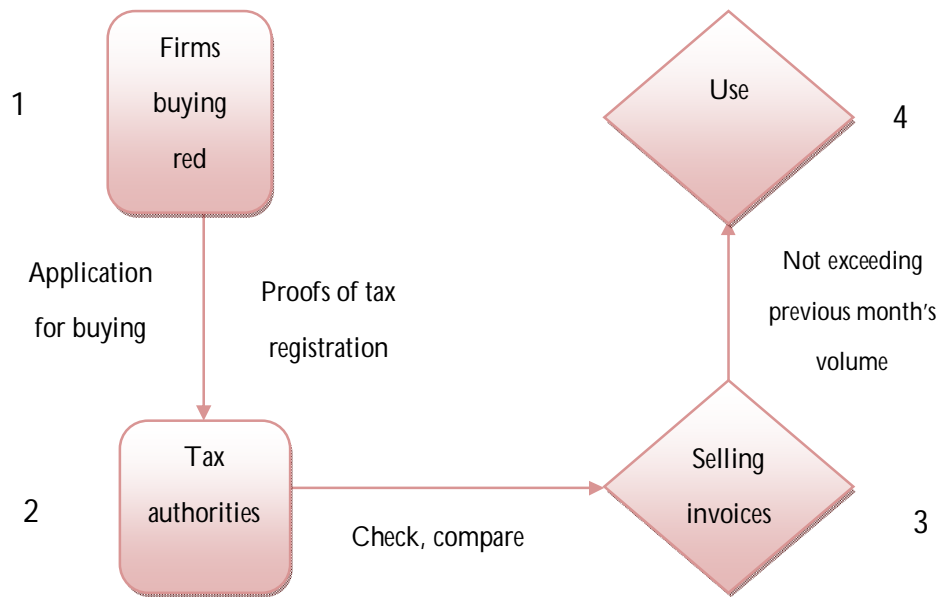


Figure 7. Process of buying invoices according to Decree no.89/2002/NĐ-CP. (Modified from Tuoitre 2010)

Figure 7 depicts the procedure in which firms and individuals used to go through in order to apply to buy invoices; the maximum amount that they could buy was restricted by the tax authority, and was based on the previous month’s usage (Tuoitre 2010). Firstly, firms had to fill in the application to buy the government’s invoices and present the proofs of tax registration to the tax authorities (1). These Bureaus would check and compare with their data (2) and then decide whether to grant firms the right to buy invoices (3). Finally, companies would use only this type of invoices.

This procedure hindered business capacity and companies spent time not on their core businesses, which reduced the efficiency and productivity. Secondly, this regulation created an illegal market for the “red invoice”, in which businesses sell their unused invoices to the other parties. Besides, in some extreme cases, individuals would register

to open new companies, just as to have the right to buy the “red-invoice”, and later sell it to the black market. The government has put its best effort to counter the problem but neither solution was proved effective.

Later, Vietnam government established decree no. 51/2010/NĐ-CP of 14<sup>th</sup> May 2010 regulating the invoice used in business transactions, which superseded decree no.89/2002/NĐ-CP and came into effective on 1<sup>st</sup> of January 2011. According to this document, companies have to print invoices themselves or order invoices printed by the third party other than the Ministry of Finance. The Ministry of Finance now prints and sells the “red invoices” only to micro firms, firms operating in regions with extreme economic difficulties, and individual business persons. This legal document has eliminated the shortcomings mentioned previously. Besides, it acknowledges the use of the electronic invoice, with only the definition but no further guidance.

On March 2011, the Ministry of Finance signed circular no. 32/2011/TT-BTC on creating, issuing, and using the electronic invoice for selling of goods and providing services, which acts as a supplement for decree no. 51/2010/NĐ-CP. This regulation mandates certain requirements that companies have to satisfy when using the electronic invoice or providing the electronic invoicing service. Furthermore, the Ministry has put its effort to standardize the electronic invoice content with other type of invoice. In conclusion, this regulation has caught up with the current situation, in which some big firms and foreign investors have been using the system, and providing businesses with different choice of invoices, which could effectively improve their productivity and efficiency and give competitive advantage in their operations.

### **3.2.2 General guidelines on electronic invoices**

The definition of the electronic invoice closely resembles to that of the structured invoicing document described in section 2.2.1. The content of the electronic invoice must include basic requirements as in the paper version, and must be written in Vietnamese as the main language.

As instructed by circular no. 32/2011/TT-BTC, the buyer and seller of goods or services should agree on the use of the electronic invoice, the format of the invoice and the method of transferring. They must then inform the tax authority about the agreement, including information such as the software for the electronic invoice, the process of creating, issuing, transferring and archiving the electronic invoice within the organization and the responsibility of each involved party. They, together with the operator and other involved parties, should negotiate and work together to ensure the technical and other requirements relating to the integrity and the security of the electronic invoicing system. In addition, the issuers or users of the electronic invoice should satisfy other legal mandatory, most notably:

- The seller and buyer must possess digital signatures which are in compliance with the laws.
- The software for selling goods or providing services must be connected to the accounting software, so that the content of the electronic invoice will be automatically updated to the accounting system at the point of issuance.

On the other hand, the provider of the electronic invoicing service should comply with certain regulations. First of all, the Ministry of Finance targeted firms in specific industry which could provide this service. According to circular no.32/2011/TT-BTC, the operators must have valid business registration in the field of information technology or banking. Secondly, they must have already provided technological solutions for the



electronically transferring and communicating between firms or organizations. Besides, they must possess sufficient infrastructure and equipments and are capable for detecting and preventing external threats, which could jeopardize the security and the integrity of the system. Finally, every six months, the electronic invoicing service provider must report to the Tax authority the list of firms using the service and the amount created and used.

Circular no. 32/2011/TT-BTC acknowledged two methods of creating and sending electronic invoices, either directly through the seller's or indirectly through third parties' system. However, the description is vague and provides little help for firm who is currently considering using the electronic invoice. Furthermore, this legal document did not state which transferring protocol is acceptable or give instructions on current model for electronic invoicing system.

Vietnam Ministry of Finance defines in circular no. 32/2011/TT-BTC the legally acceptable archiving practices of the electronic invoice. Accordingly, archiving should be done electronically by the data storage devices, for example external hard drive, USB flash drive, memory stick, or by cloud storage. Regardless of the storage solutions, firms which implement the electronic invoicing system must ensure that:

- The electronic invoice and its content can be accessed when needed.
- The storage format must be original or in other similar formats which allow the content to be shown correctly.
- The storage solution must allow the authentication of the origins, the time of issuing and receiving, and the recipients.
- The storage period must comply with the current accounting rules, and the consolidator should keep its version as well.

## **4 Methodology**

Previously, subsection 1.2 has demonstrated the research questions for this study. This part of the thesis will discuss and elaborate the methodology exploited to reach those goals. In the first part, I will show the research type and method, and how they would help for the conduct of the thesis. Then I will demonstrate the data collection and analysis.

### **4.1 Research type**

Adam, Khan, Raeside & White (2007, 20) have classified research into 3 types: descriptive, explanatory and predictive study. They are very different in their nature and purposes and scope. Descriptive research, as its name suggests, aims at describing a phenomenon but not investigating into how and why it might happen. Explanatory study, on the other hand, gives more insight since it also explains the reasons for the investigated subject to occur. Predictive research brings the research scope to the higher level; as in addition to elaborating the characteristics of the subject, it also predicts the future outcome of the phenomenon, given the specific alterations of variables. (Adam et al. 2007, 20.)

This thesis will take the form of the descriptive research and it will describe about the current challenges of adopting the electronic invoicing system in SMEs in Vietnam. The subject under investigation is Vietnamese SMEs, which will require a method of analysis to thoroughly and precisely describe the whole population.

## 4.2 Research method

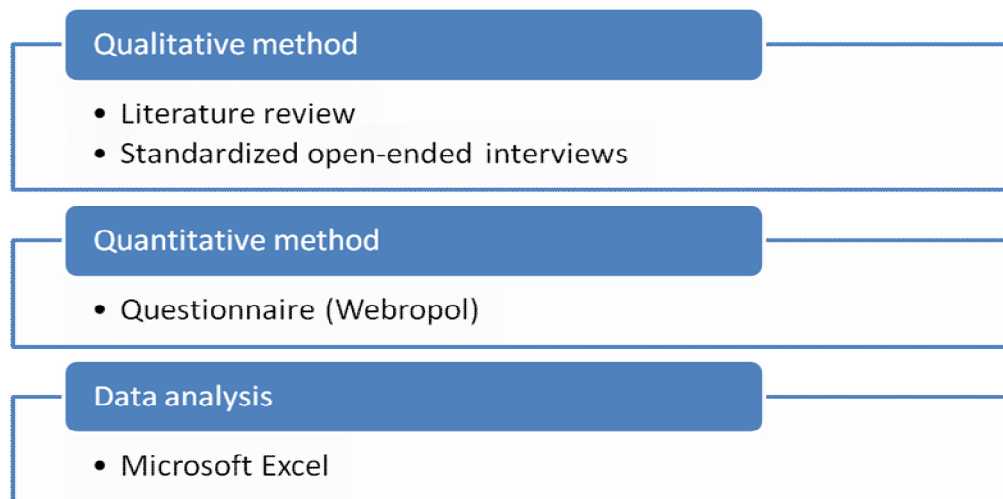


Figure 8. Research methodology and tools.

Figure 8 pictures the methods and tools exploited for the conduct of this thesis. Borrego, Douglas & Amelink (2009) suggest three methods for researching: Qualitative research, Quantitative research and mixed method. Quantitative research method allows the researchers to test his hypothesis in a large population through an objective data collection process, which is often administered by survey and other online tools. (Creswell, 2002.) Qualitative research, as defined in their papers, is the process of collecting and analyzing textual data, which includes interviews, focus groups, conversational analysis, observations and ethnographies. Unlike quantitative research, qualitative research focuses on smaller population but examines a particular context in greater detail. (Borrego et al. 2009.) Mixed method is the combination of the two methods, which “involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research.” (Creswell, Clark, Gutmann, & Hanson 2003, 212.)

The **mixed method** solely applies for this thesis. The sequence of the data collection process is the qualitative type, followed by the quantitative one, which is administered through an online survey platform.

According to Fielding et al. (2010), the main reason behind using **literature review** is that it allows access to a rich database of prior and related research and studies. Moreover, it is often used along with other type of information, for example primary data. For the conduct of this thesis, this type of data is of vital importance as it builds the foundation of the research, gives an insight of the investigated subject and supports the validity of primary data, which is obtained through the interviews with Finnish electronic invoicing service providers.

**Qualitative method** does not take a central role in this thesis research. However, it serves to collect, analyze and compare information gathered from the literature review and standardized open-ended interviews. Due to the nature of the research, qualitative method allows greater flexibility and deeper insight to the issue. (Marschan-Piekkari & Welch 2004, 387) The researcher would be able to explore qualitative questions such as “what are the reasons for continuing using paper invoice?”, “What are the biggest challenges for adopting electronic invoicing systems in companies?”, or “What are the major motives for adopting the system?” Information collected from this stage will be compared, consolidated, standardized and codified into the survey questionnaire.

**Standardized open-ended interviews** are conducted with the participation of two Finnish e-invoice facilitator and operator to examine their perspectives of the issue. The interview is conducted face-to-face to ensure maximum interaction between the interviewer and interviewees. Questions in the interviews are the same for each interviewee and are standardized in the wording, and stated such that the response would be open-

ended. (Gall, Gall, & Borg, 2003.) This type of questions allows the participant to contribute more throughout the interview by fully expressing their ideas, thoughts and viewpoints. Besides, it can help confirm the information collected in the literature stage for its validity and avoid potential biases. However, this type of interview poses challenges, since it would be more difficult for the researcher to reflect accurately and comprehensively all aspects of the responses throughout the coding process (Creswell, 2007.)

After collecting the primary and secondary data in the prior stage, I create a questionnaire and spread it using an online platform. The **quantitative research method** in this stage makes it feasible to examine a large number of samples. Based on the data which has been collected, the author could be able to generalize and make inferences about the current situation of the electronic invoicing system in Vietnamese SMEs. (Creswell, 2002.)

### **4.3 Data collection**

This thesis employs two methods of data collection: the interviews and the survey. In the subsequent parts, the descriptions of the method and how it is used is demonstrated.

#### **4.3.1 The interviews**

I have conducted two interviews with the Finnish companies: one is the facilitator of the electronic invoicing system and another is the e-invoice service provider. There are three reasons for choosing Finnish companies. Firstly, I was studying in Finland at the time I started this research. Hence, it would be more convenient and economical to contact those firms and do an interview. Secondly, Finland, as has been presented in

the previous part, is a leading country in the field of electronic invoicing. Thus, those companies would have significant experience in this area. Finally, it would be interesting to find out if there are any differences between Vietnam and Finland in the e-invoice, based on the information gathered in the interview and the actual survey results.

The interviews' theme is about the motivations, challenges and benefit for adopting the electronic invoicing system, especially for SMEs. An invitation for the interview together with the interview's theme was sent out to the interviewee so that he/she has time to prepare in advance. Once the confirmation for the interview had been received, the interviews were conducted at the interviewees' venues. The format of the interviews has been discussed in details in section 4.2. Each interview lasted for approximately 1 hour and the interviewees were asked the same set of question. Questions are open-ended and they gave the interviewees a chance to fully express their opinions. Table 3 below gives further information about the interviews. Questions discussed during each interview can be found in the appendix 3.

Table 3. Interview information

<b>Date of the interview</b>	<b>Company</b>	<b>Position</b>
12.12.2012	Federation of Finnish Financial Services	Development Manager
19.12.2012	Tieto	E-invoicing Product Area Director

### 4.3.2 The survey

Within this subsection, I will illustrate the structure of the quantitative research, specifically the questionnaire. Since this thesis is a research about the electronic invoicing system in Vietnamese SMEs, the main target respondents of the research are those who have a strong knowledge about the invoicing process of their firms and have an authority over the use of the invoices in their companies, preferably the manager or head of the accounting or purchasing department. An invitation to participate in the survey is sent out, attached with a cover letter explaining the nature of the research and who would be eligible for answering.

Appendix number 1 shows how the questionnaire is being navigated according to the participants' answers. In general, the survey can be divided into four parts, of which the first part is for collecting basic information of the companies being investigated. The information includes company's industry, its size, location, number of invoices to and from per month and the main type of customers it is serving. Based on the company's familiarity with the electronic invoicing system, it is then directed to either three different paths.

In case the respondent has not heard or does not know about the electronic invoicing system, the survey will automatically end. This is to protect the thesis from the probability that the respondents will assume their answers for what they have no knowledge about and thus ensure that the outcome of the survey is unbiased.

The second path is for the respondents who have knowledge about the electronic invoicing system but decide not to implement it in their firms. For this choice, the questionnaire serves to survey the reasons behind the long-term use of the paper invoicing

system, what hinders them from adopting the electronic invoice and whether they have any plans for the future implementation of the system. Responses gathered in this stage will be the main source of information to provide answers for the investigative questions 1 and 2 set out in section 1.2.

The third part is for those who have actually used the electronic invoice, including the incoming or outgoing invoices or both. The survey will investigate whether the respondents are satisfied with the system, the benefits that they can perceive when implement the system and what they find most difficult to implement. Information gathered from the respondents in this part will provide a basis for answering investigative question 3.

The choices for each question in the survey are created based on the data gathered throughout the literature review process and the interviews with Finnish firms. There are also open-ended alternative, where the respondent can fill in his/her opinion other than those that have been listed in the questions. This enables the participants to contribute more to the outcome of the thesis, and also generate different viewpoints, which have not been reflected in the academic study.

In order to spread the survey to a wide range of participants, I used Webropol, an online survey platform. This system helps to monitor the answering process of the respondents by avoiding incomplete answers, and directing them to questions according to their choices. Then, the survey was subjected to a test to decide whether it was working properly and stably. The testing period lasted for one week, during which it was sent to particular persons who would then give feedback about the questionnaire, including thesis advisors, colleagues working in the same thesis theme group and one



company. Based on the comments received, it was then modified and tested repeatedly to ensure it was ready for collecting answers.

After finishing creating the survey and testing its functions, I generated a link to the survey, and enclosed it in an email to potential participants. The mailing list of the respondents was then identified from the database of Binh Duong custom bureau. This office was then implementing the electronic custom declaration and thus it showed particular interests in finding out about the electronic invoicing habit of Vietnamese SMEs. In addition to the mailing list from the Custom bureau, I generated a contact list of SMEs myself, which were available on the internet. The time period for answering the survey lasted for almost 2 months, during which, emails were sent again as a reminder for them to participate in the survey. The results of this quantitative research will be discussed in more details in the chapter 6.

The language of the survey is Vietnamese to ensure that the respondents have a clear understanding of the questions and the choices they are about to choose. Once the survey period ends, the data will be consolidated again and translated into English for reporting purposes.

#### **4.4 Data analysis**

Trost (2005, 53-54) advises interviewers to use recorders or video cameras during interviews as it would help to examine the data later. However, one problem involved in the use of such equipment is that it is time consuming. I have decided that information gathered throughout the interviews with Finnish companies plays a secondary role, since it would help to confirm the data from the literature review process. Thus, to save the time and effort and to concentrate on analyzing primary data from the survey, I

decided to carefully take notes during the interviews. An in-depth review of the interviews is reflected subsequently in chapter 5.

Primary data collected from the survey research is analyzed with the help of SPSS system and Microsoft Excel. These tools allow the researcher to analyze, interpret the results, and compare between different target groups with relative ease. The discussion and conclusion part of the thesis will be based mainly on this information.

## **5 Case companies' perspectives**

This chapter of the thesis reflects the interviews with the Finnish operator and facilitator, which have been conducted to strengthen the findings in chapter 3. Furthermore, it also helps to identify which factors are the most relevant in determining the choice of the invoice in SMEs in the manufacturing industry.

The service providers would be most suitable for the purpose of the research, since they serve a wide range of customers and therefore would provide a profound and unbiased insight of the situation. Interviews are conducted with the cooperation of Federation of Finnish Financial Services and Tieto. The interviews are reflected starting with company introduction, followed by the interviews' discussion topics.

### **5.1 Federation of Finnish Financial services (FFI)**

Federation of Finnish Financial (FFI) services is a trade body representing banks, insurers, financial institutions, securities dealers and other financial participants in Finland. Its membership includes 433 companies and a total of 42,000 people. Its role is to ensure the functioning of the operating environment and financial market, as well as streamlining and promoting an effective payment system.

### **5.2 Tieto**

Tieto, which was founded in 1986, is the largest company in the Scandinavia in providing IT-based solutions to both public and private customers. The company has global presence in over 20 countries and has an annual sale of EUR 1.8 billion. Tieto offers its customers a wide range of services such as Managed services, Industry prod-

uct, Consulting and System integration, among which include electronic invoicing system.

### 5.3 Reflection on the interviews

The interviews started by discussing about the **reasons for firms to continue using the paper invoice**. Firstly, it is the mindset of the companies that hinders the change process, especially in the case of SMEs. These companies have constraints in time and resources. However, a change in an existing process would require extra effort from the management and employees. Thus, changing from the paper invoice to electronic invoice would not be a very attractive choice in their perspective. Both informants identify this as the most difficult problem to tackle.

Secondly, it is due to the companies' clients, who refuse to accept the electronic format of invoices. Especially in the case of SME, if the customer is the big client, the company has no other choice than to continue using the paper invoices. Thus, the change of invoicing habit depends significantly on the customer side.

Finally, the differences in invoicing channels between business partners also pose a challenge for adopting the electronic invoice. The interviewee said that a firm could not use this system for all of its existing customers as not everyone would accept. This situation forces the firm to adopt different forms of invoices for each type of clients, thus requiring more time and effort. This, again, is another barrier toward adopting electronic invoices.

The next discussion topic was about the **motivation for using the e-invoice in firms**.

The first and most important factor is to strengthening the relationship with the firm's current business partners, especially big ones. It seems in contradiction with the pre-

vious part where the clients are not in favor of e-invoice. However, if the clients have already in place an existing e-invoicing system and have received benefits from using it, they will then require or push the firms to issue electronic invoices. This is a case that has happened within HP, who explicitly stated in their website that their suppliers must submit their invoices electronically through HP's network (HP).

Secondly, the monetary and time benefit associated with the new invoicing system would motivate firms to implement it. SMEs are extremely constrained with limited budget and time. A fully automated invoicing process would free up labor to do more productive work, which in turn would increase the productivity and enhance the performance. This point is in line with the literature review in the previous section of the thesis.

The last motivation is the fact that working capital management would be improved using the electronic invoice. This automated process allows firms to better track its invoices and make payment promptly. However, according to the manager, this benefit is not visible for SMEs to realize.

Both companies agree that the biggest **challenge for implementing the e-invoicing system** is the mindset of companies toward it. According to both managers, companies are often reluctant to make any changes to business practices which have long been in place. Such action would cause them to put more effort to educate about the changes, implement and supervise the implementation processes. In addition, time and costs associated with the change of the invoicing system must not be neglected.

Interoperability between different e-invoicing systems is another barrier to increase the adoption. The interviewee argues that company would not want to choose different e-

invoice service provider for each of its clients but rather a single one. Thus, a universal set of standards for the electronic invoices as well as increasing interoperability between different platforms would motivate firm toward using this system. This problem is also reflected as one of the three pillars that build up and support mass market adoption of electronic invoices, suggested by Harald (2009, 19).

## **6 Results**

The result chapter presents the findings from the quantitative research stage. It starts by demonstrating the responses, background information of the respondents and then goes into details of the main results.

### **6.1 Survey responses**

As presented in the methodology chapter, the mailing list was gathered from 2 sources: the database of Binh Duong custom bureau and the information available on the internet. From these sources, 238 valid emails of potential respondents were identified and were sent with a link to the survey.

After 2 months of collecting responses, 70 answers are received, making a response rate of 29,4%. There are no incomplete or blank answers. Amongst 70 answers, 50 are of SMEs, which are eligible for further analysis. Thus, the analysis presented below is only for these 50 companies.

The respondents represent the population, which the research is investigating. The companies spread between different industries and locations and thus, would give a general overview of the issue the thesis is about to discover. The respondent number is of a decent amount and has reached the objective set out at the beginning. However, more responses are preferable as it would increase the reliability and accuracy of the research.

## 6.2 Respondent demographics

At the beginning of the survey, I asked participants about their background information, including the industry, size, location and the number of invoices sent and received per month. The data collected is now graphed in figures below.

Merely half (46%) of the respondents employ 10 to 99 employees. Micro firms (of less than 10 employees) also account for 16%, while the rest of the sample has above 100 staff each firm (Figure 9).

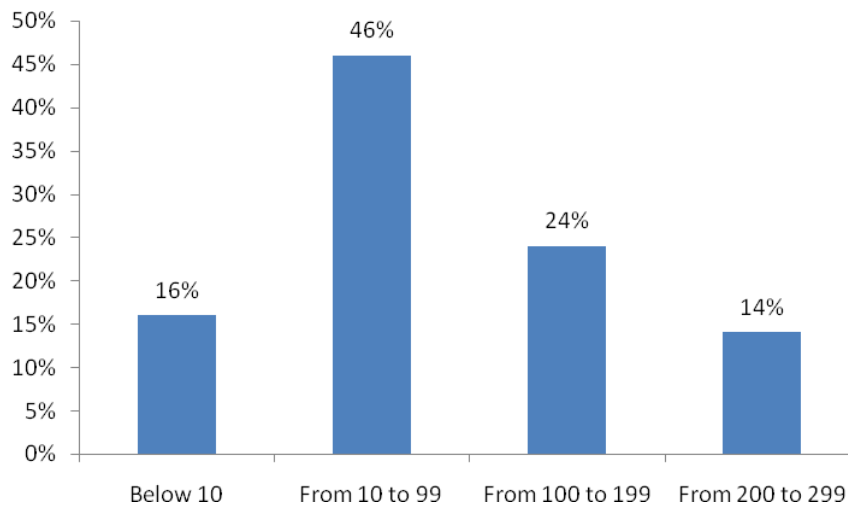


Figure 9. Company size by number of employees (n=50).

The majority of firms participating in the survey issue less than 100 invoices per month, accounting for three fourth of the sample. 22% of the respondents have 100 to 499 sales invoices and only 4% send from 1000 to 4999 invoices per month (figure 10).



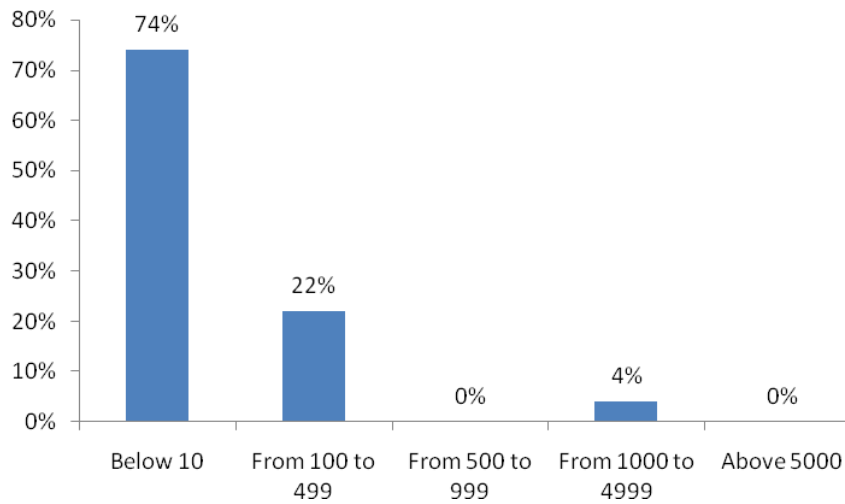


Figure 10. Number of outgoing invoices per month (n=50).

For incoming invoices, it is noticeable that this chart takes the same trend as the one for outgoing invoices. The interval of below 100 incoming invoices per month is still the highest, while the intervals of between 500 to 999 and of above 5000 purchase invoices per month have none (figure 11).

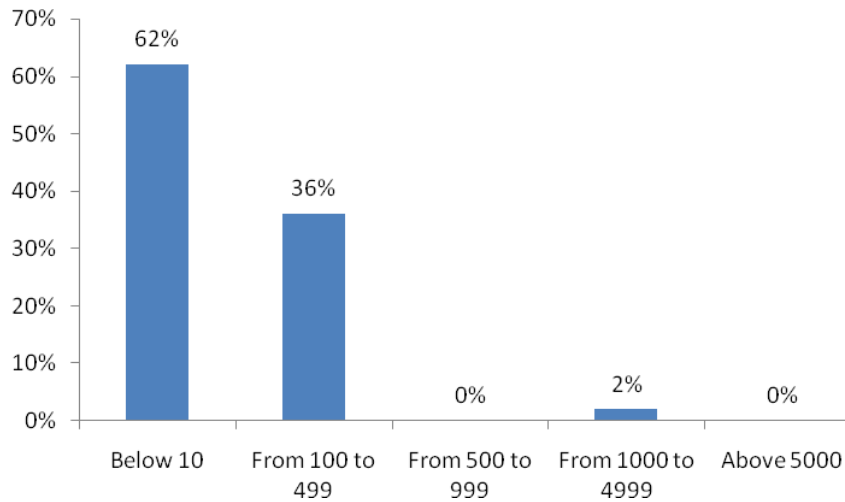


Figure 11. Number of incoming invoices per month (n=50).

The participants are also asked about main type of customers they are serving and the results are pictured in figure 12. Business customers play an important role as 71% of the companies serve them. 22% of the respondents have the main customers as households and individuals while only 7% serve the public sector.

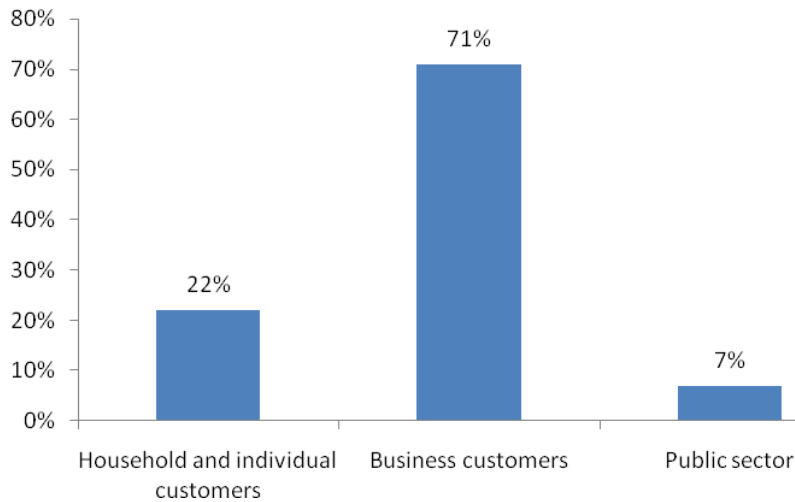


Figure 12. Main customers of the respondents (n=50).

The final question in the first part of the survey asks the respondents about their familiarity with the e-invoicing system (figure 13). Based on their answer, the survey will navigate them to different question set. A majority of the respondents (76%) know about the e-invoice but do not implement this system in their firms. 4% are currently sending and receiving the electronic invoice while 20% have no knowledge about the system. This result confirmed a recent announcement of the Deputy Minister of Finance, Mr. Do Hoang Anh Tuan, in an interview with Thanhnien newspaper (2012). According to the officer, the adoption rate of the e-invoice is from 10% to 12% of total firms and that the e-invoice is more common in big firms, but not in SMEs.

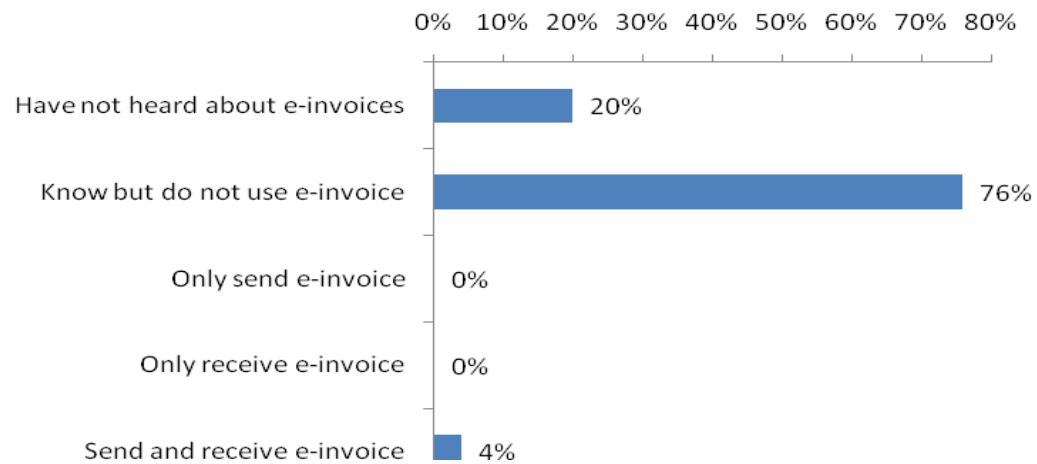


Figure 13. Familiarity with e-invoice (n=50).

### 6.3 Main findings

I will present the main findings of the survey in this section of the thesis. It is divided into three parts, starting by the reasons for using the paper invoice, then continuing with the barriers for implementing the e-invoice system and what the companies have benefited from it. Final part is a reflection on the future outlook of the e-invoice in Vietnamese SMEs.

#### 6.3.1 Reasons for using paper invoices

For those firms, which are currently using the paper invoices, the survey asked them how they issue their paper invoices (figure 14). More than half of the respondents out-source the printing processes to the third party while 26% of them print the paper invoices in-house. The standardized “red invoices” of the government account for 18% of the respondents’ choices as they are available to some specific firms with certain conditions. Only 3% of the respondents scan and send the invoices to their customers, and this is the least favorable method.

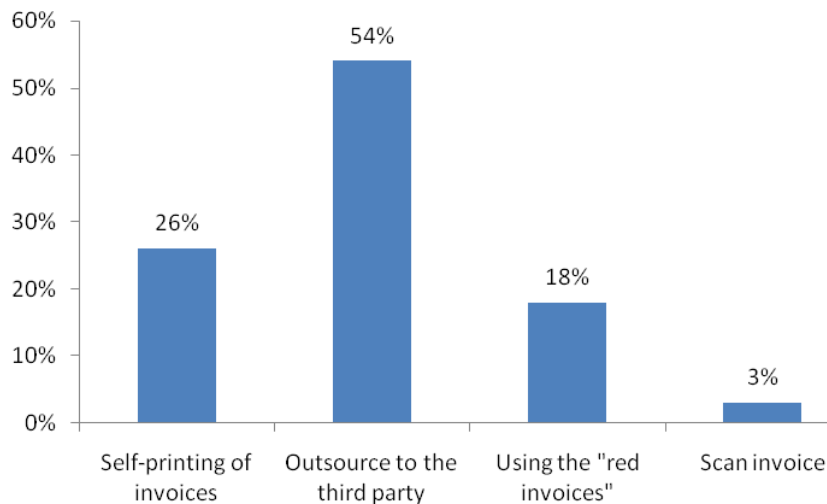


Figure 14. Method of printing paper invoices (n=38).

Hence, we will explore the reasons for continuing using the paper invoices (figure 15). In the context of Vietnamese SMEs, the simplicity of the paper invoices is what keep them using, as it is the choice of 79% of the respondents. It is fully reflected in a statement of the director of a glove manufacturer in an interview with English Vietnamnet (2011); he was afraid that his firm did not have enough computer and technical knowledge to deal with the e-invoice system. Hence, choosing the paper invoices seems to be more reasonable.

The paper invoice, itself, also poses a challenge for firms to changing to the new electronic format. 42% of the respondents said they have been using the paper invoices for long, that they want things to remain the same. Other choices are that the paper invoice system does not require extra investment and that the customers do not accept the e-invoices. Both alternatives account for 13% of the respondents each.

It is noticeable that no participants say that the paper invoices are cheaper than the electronic invoices. This data suggests that Vietnamese SMEs perceive the cost reduction benefit per e-invoice as compared to the paper one. However, it could be that they

could not achieve a sufficient invoice volume to allow them to be benefited from the economy of scale of using the e-invoice (Thanhniem Online 2012).

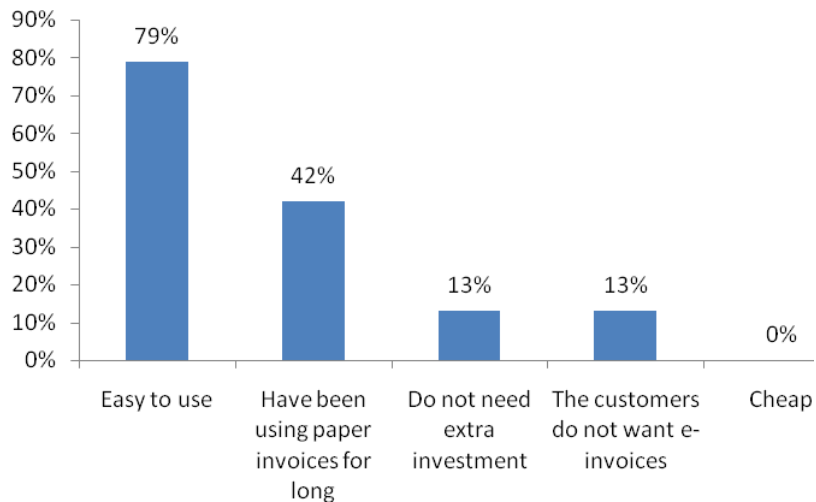


Figure 15. Main reasons for using paper invoices (n=38).

### 6.3.2 Challenges to implement e-invoice

Figure 16 summarizes the respondents' answers regarding the barriers for implementing the electronic invoicing system. In general, all firms perceive that there are obstacles to the e-invoices. Specifically, the additional investment required when implementing the e-invoices and the insufficient IT structure are the top two challenges for firms that want to implement the e-invoices. Both choices account for merely half of the respondents. The figure suggests that these two issues must be tackled first in order to increase the market adoption rate of the e-invoice, especially in the case of SMEs.

The next most selected answers are the mindset to keep the old system (28%), the complex implementation process and the lack of the e-invoice service providers in the market, both of which receive 23% of the answers of the respondents. The top three

lowest choices are the lack of business capability (13%), the differences in invoicing channel between suppliers and customers (13%) and the constrained budget (10%).

There is one respondent who gave an opinion other than those listed above. He stated that currently, some government authorities, for example the tax inspector and the government auditors, still treasure the paper invoices as proof of business transactions. This mindset has imposed a big obstacle and shunned firms from trying to implement the e-invoice. However, this is a personal opinion and more investigations are needed to decide the real impact of this fact.

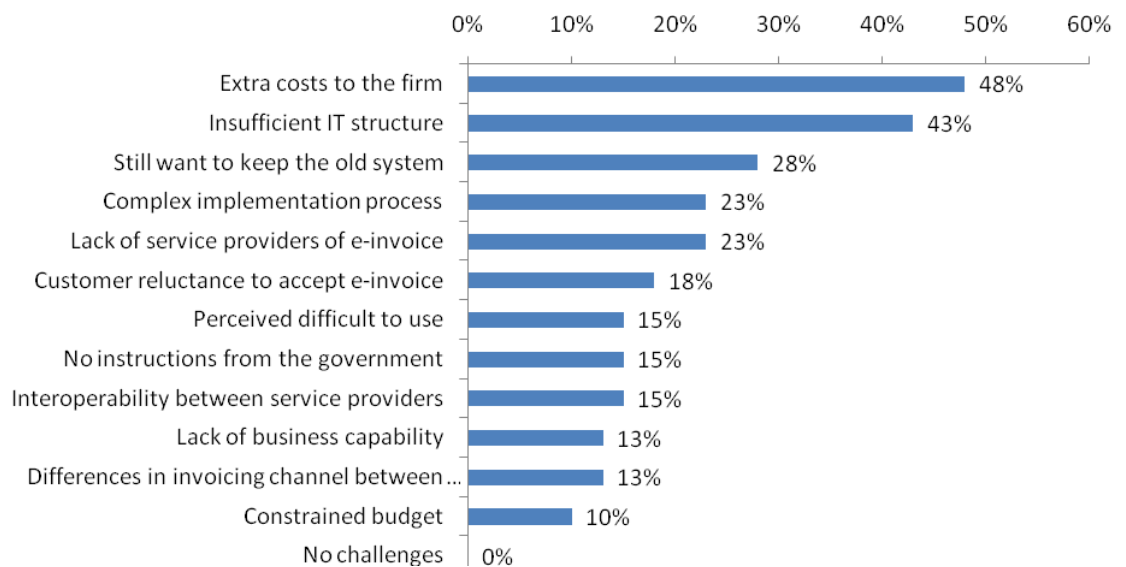


Figure 16. Barriers for implementing e-invoice (n=38).

This result differs from a global study on the e-invoice conducted by Basware (2012). In that research, the top three barriers are identified as the lack of supplier onboarding capabilities, the complexity of implementing the e-invoicing solution and the customer reluctance to receive invoices electronically, each receiving 30%, 29% and 29% respectively. However, in this research, those above options account for 18% to 19% of total

respondents, a remarkably discrepancy. This fact shows the uniqueness of companies' perception about the e-invoices of Vietnamese SMEs as compared to the global market.

I further categorized these barriers according to the company size and scale the choices into the percentage of total firms of that corresponding size interval. The results are illustrated in table in appendix 2. In general, there are not many significant differences in the answers of firms of varying sizes, except for few points illustrated below.

From the table, we can conclude that for micro firm (less than 10 employees), the extra cost associated with investing in the new equipment and system for the e-invoices are the biggest challenge. The problem is less worrisome as the firm size increases. Other factors such as the insufficient IT structure and the complex implementation of the e-invoice are among top concerns for micro firms.

For companies of bigger size, especially 100+ employees, what they find most challenging are the lack of the e-invoice service providers in the market, and the fact that customers are not interested in accepting the e-invoices. They account for above 50% and above 33% of the respondents, respectively. These two options have not been reflected by firms of smaller sizes.

### **6.3.3 E-invoice benefit**

In this subsection, I analyze the respondents' answers about the benefits that they receive when implementing the e-invoices. Unfortunately, the survey only identifies two SMEs, which have actually adopted the system in their daily operation.

Those two companies answered that they are pleased with the e-invoicing system. The proportion of e-invoices is above 5% (from 5% to 19% in the first case, and from 20%

to 49% in the second case) of the total invoices. The main benefits that they experience when using the e-invoices are the strengthening relationship with the suppliers and customers, and the reduction of time and cost related to processing invoices.

Since the number of respondents in this section is limited, it is statistically insufficient to reflect any general view for the whole population. Thus, to avoid any bias and assumption within this research, I will not compare or conclude anything from the data but present it as above. Solutions to bridge the research gap will be discussed in more details in chapter 7.

#### 6.3.4 Respondents' future plan on e-invoices

The last question of the survey asks those who have not implemented the e-invoicing system whether they have any plan or strategy for the e-invoices in the future (figure 17).

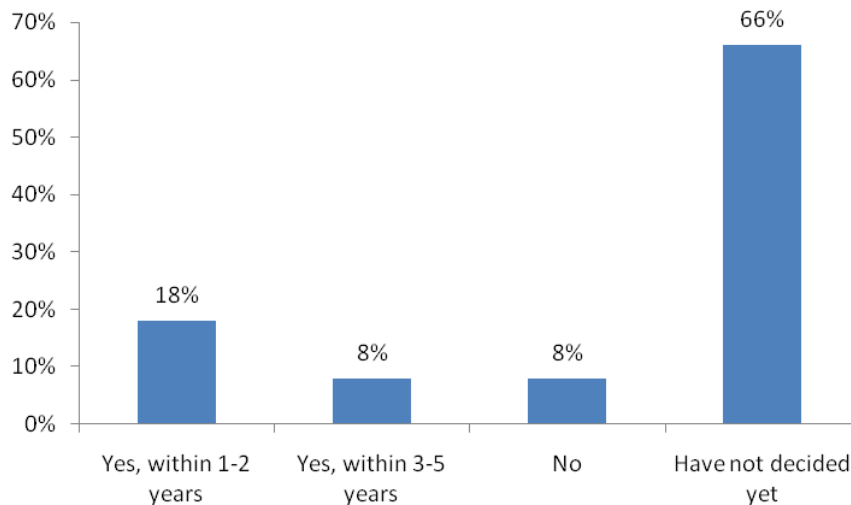


Figure 17. Respondents' future plan regarding implementing e-invoices (n=38).



18% of the respondents said that they are having plans to adopt the e-invoices within the next 2 years. A further 8% said that they will implement the system in the next 5 years, making a total of 26% of the respondents answering “yes” to this new system. Contradictory, 8% of the firms explicitly announce that they will not use this system.

More than half of the firms (66%) have no clear plan yet, regarding whether or not to adopt the e-invoicing system. This figure suggests the indecisive state and the reluctance of the market toward the new invoicing system. Perhaps, more could be done to persuade firms from this segment to consider changing their invoicing habits, for instance, educating firms about the benefits of the e-invoice, having clearer instructions from the government, and having collective actions from the government, the e-invoice service providers and firms.

In addition, the data reflecting the firms’ perspective on why they keep using the paper invoices and the difficulty of adopting the e-invoices should be of importance help to increase the rate that firms will say “yes” to the system. These problems should be tackled so as to create a friendly environment for the e-invoices.

## 7 Discussion

In the discussion chapter, the author will discuss in-depth about the reliability and validity of the research. These features are the most important aspects of every research and the results of the study would be worthless in the absence of these. Subsequently, reflection on the main results, as well as recommendations, further research and development and evaluation of personal learning is also included.

### 7.1 Main results

This thesis expects to give answers to the following 4 questions:

1. What are the reasons for SMEs to continue using paper invoice?
2. What are the perceived challenges to implement e-invoicing system?
3. What are the benefits that e-invoicing system brings back to companies that have implemented?
4. What is company's plan regarding electronic invoice in the next five years?

The theory framework indicates the main reasons for the current slow progress of the e-invoicing system. The results are in line with the theory's anticipation. Despite the superiority of the e-invoice over its paper format, the latter is still in favor due to its simplicity, its long tradition, the fact that it does not require the extra investment and that the customer still want to accept the paper invoice rather than the electronic format.

There have been many researches about this topic, but they are conducted on global scale. One of which include Basware (2012) study. This thesis, on the other hand, aims at a specific country - Vietnam, and with different respondent group - small and medium sized firms. However, the results yield some differences.

In general, both studies agree on the barriers for implementing the e-invoicing system. However, Vietnamese SMEs perceive these barriers and rank them differently. According to what the author has found, the extra investments associated with the e-invoice, the insufficient IT structure and the paper invoice itself are the biggest obstacle that firms might face when adopting the e-invoices. These alternatives account for a majority of respondents, whereas in Basware (2012)'s study, they only account for about 18% of the answers.

The differences can be explained that Vietnamese SMEs are different from Basware's respondents in term of size, revenue, employees and capability. Thus, these factors strongly impact the firms' choices of an invoicing method and influence their perspectives differently.

Moreover, the respondents' answers regarding their difficulties of implementing the e-invoices are categorized according to their sizes in appendix 2. We can see that small firms perceive the obstacles different from bigger firms. The most remarkable points are that the cost of investing in the e-invoicing system and the complex implementing process are the top concerns for firms with less than 10 employees, while companies with 100+ staff, the lack of the service providers in the market and the customer reluctance toward the e-invoices are the most worrisome.

The future of the e-invoicing system in Vietnam seems to be undetermined as over half of the firms said in the survey that they have no clear plan yet regarding the e-invoice. Only one fourth said yes to this system in the next 5 years. More actions need to be taken from all involved parties to persuade these undetermined respondents to use this system.

## **7.2 Recommendations**

Based on the main findings of the research, the author has outlined few points to promote the implementation of the e-invoices in Vietnam. The first action is for the responsible authorities to tackle the issues these firms currently face. At the moment, the Ministry of Finance is preparing for a co-operation with one domestic telecommunication giant to develop a platform for the e-invoices. In my opinion, this is a right move, as this will help to reduce the costs for firms to invest in the e-invoicing system and to increase the number of the service providers in the market.

Secondly, the service providers and the authority should co-operate to educate SMEs, about the benefits they would get when shifting to the e-invoice. Advertising campaigns, conferences, policies in favor of the e-invoices are the suggested actions.

Moreover, Vietnam government should be the initiator in promoting the e-invoices, as in the case of Latin American countries. A recommendation is that they could follow the 3-pillar framework designed by Harald (2009), including the codes of practice for firms, the set of guidance for interoperability between different platforms and the universal content standard.

## **7.3 Limitation of the study**

One major shortcoming of this thesis is the lack of responses and data to analyze the actual benefits of using the e-invoice in Vietnamese SMEs. In fact, the number of firms claiming to have implemented this system is only 2, a statistically insignificant amount. Thus, their perspective must not be considered as the general point of view of the whole population as it will compromise the reliability and validity of the whole re-

search. To keep the research objective, unbiased and reliable, I decided not to answer the investigated question 3 stated in section 1.2.

The cause of this problem is due to nature of the e-invoice. The electronic invoice is a relatively new concept in the emerging markets, as it has been reflected in the theory part. The use of this system is even less popular in SMEs, and more specifically, in Vietnam. Thus, the situation poses a challenge for the researcher to acquire responses from this target group. Statistically speaking, to obtain 20 answers, with an ideal e-invoice adoption rate of 12% in the leading countries (EBA & Innopay 2010, 26) and a current response rate of 29.4%, the researchers need to send out 570 invitations, a tremendously labor-intensive task. In future research, to overcome this problem, a cooperation with a well-known institution which has the expertise in the field of the e-invoice is recommended. It does not only help to save time and effort but also brings the survey to a wider range of respondents, which in turn increases the reliability of the study.

#### **7.4 Reliability and validity**

Matthew & Ross (2010, 479) define **reliability** as the research method that would yield the same results when another researcher tries to reproduce the research in the same manner. This is an aspect related to the consistency characteristic of the study. **Validity** relates to the fact that the collected data addresses the investigative questions and is a close representation of the target subject, which the researcher is to investigate. In short, it is an indication of the research accuracy (Matthew & Ross 2010, 479-480).

In the methodology chapter, the author has reflected thoroughly the type of the research methods, the reasons for the choices, the stage they are implemented and the purpose of each. The description of the methodology is comprehensive and one should

be able to exploit it to reproduce the research or to conduct another research with a slight change in research setting, for instance, the location or target segment, with ease. Thus, the research is deemed to be consistent and reliable.

Secondary sources exploited in the research come from accredited and well-known authors, institutes and newspapers. They are carefully quoted so that others could trace it to the original study. The primary data comes from two sources: interviews and a survey. The interviews are conducted in a structured and standardized manner. The interviewees have high positions in their firms and have long years of expertise with the e-invoicing industry. Questions in the interviews are open-ended, which allowed both the interviewers and interviewees to go into discussions in more details. The survey was created with the help of an online platform and was carefully monitored so that the results contained the responses from the intended respondents. Furthermore, before conducting the analysis, those who are not qualified for the research are eliminated out of the sample. This action ensures the consistency, accuracy and unbiased of the study.

## **7.5 Further research and development**

This thesis sets the foundation for other research about the e-invoicing system in Vietnam. Thus, there are plenty of topics to develop upon. The thesis poses a need for further research on what can be done to tackle the difficulties of implementing the e-invoices that have been identified within this research, on the point of view of the responsible authorities, the service providers and the firms.

There is a need to learn about what the government and the responsible authorities should do to create a friendly environment for the e-invoice and to increase firms' awareness about this system. Besides, on the e-invoice operator side, it is essential to study their strategy and plan to market their products to potential customers. In addi-

tion, a researcher could conduct a study on the implementation process of the e-invoices of firms, especially ones that are planning to do so. This topic would be interesting as it would reflect the whole process and pinpoint out differences (if there is any) between Vietnamese and foreign firms.

## **7.6 Personal learning evaluation**

This thesis is conducted in a 6-month period, from January to June, a relatively long time frame. The majority of time is contributed to the data collection stage, as this is the most wearisome but important task.

In order to complete the thesis, I have to constantly read all the related materials, documents, research and studies about the e-invoice, conduct interviews with the Finnish firms to understand their perspectives on the issue and to confirm the results of literature review process, have meeting with my thesis advisor to decide on the research method and how my thesis would progress, control the survey, collect the responses and analyze the results. What I found most satisfactory is that the theory framework reflects many recent studies of recognized sources on the e-invoices and it sets a strong foundation for the latter part of the thesis; and that the respondent number is sufficient to give an insight on the situation in Vietnam. The thesis progress went well thanks to the kindness and the help of the interviewees, as they were so eager to discuss on the topic, and the active participation of the respondents in the survey.

However, I encountered some obstacles that threatened the outcome of the thesis. At the beginning of the research, I have been struggling with the research problem and the research scope. It has been largely defined and it contained many questions to investigate, as I was ambitious at that point. With the help and guidance of my thesis advisor, I was able to frame the research problem narrower and to demarcate the target. The

second challenge is that, during the data collection process, for almost half the time allocated to that stage, I received too few respondents. For once, I considered giving up the thesis to move on to another topic that would be easier. At last, I managed to get help from the head of Binh Duong Custom Bureau, who promised to spread the survey to the firm's mailing list.

Throughout the research, I have learned a lot and develop myself. The biggest lesson learned is the skill to control the project progress carefully, so that no excessive effort is spent on any single stage. The project finished at target deadline. In addition, during the result analyzing stage, I was able to apply the soft skill that I have developed at university. Having to look at different data set from different respondent categories and to pinpoint out the differences helps enhance my analytical and reasoning skill significantly.

I was excited to learn about the e-invoice, and was able to investigate about the current situation in Vietnam. It is amazing to see how the perspectives of Vietnamese SMEs differ from those of global firms, and how Vietnamese regulations have developed to recognize the electronic invoice in business transactions. This knowledge is of extreme importance and surely helps me in my future career path.



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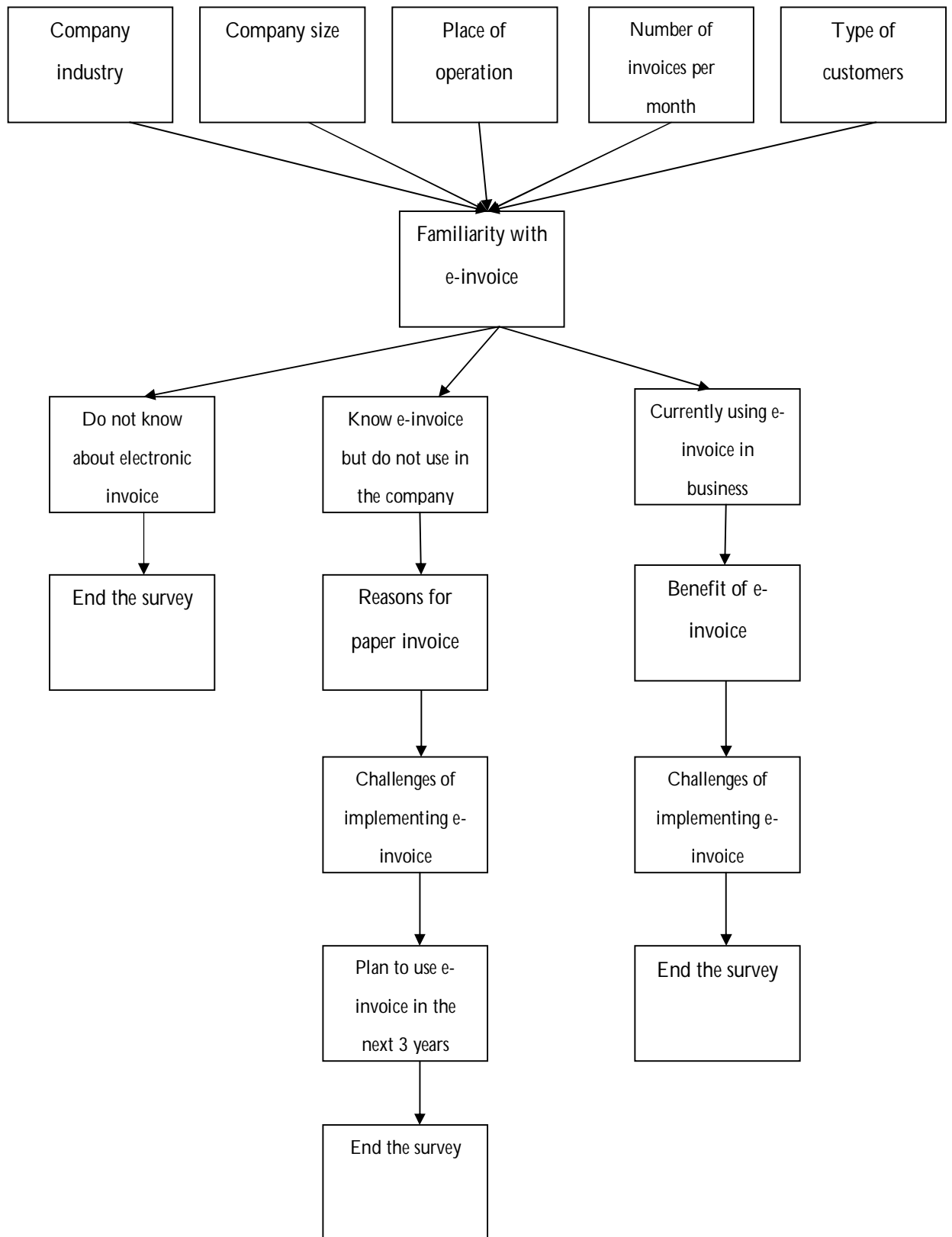
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# Attachments

## Attachment 1. Question sets for participants in the survey.



**Attachment 2.Challenges to implementation of e-invoice in percentage term by company's size.**

	Below <10	10-99	100-199	200-299
Perceived difficult to use	33%	0%	22%	33%
Extra costs to the firm	83%	59%	22%	33%
Constrained budget	0%	12%	22%	0%
Still want to keep the old system	33%	29%	44%	0%
Insufficient IT structure	50%	24%	67%	67%
Lack of business capability	0%	12%	33%	0%
Customer reluctance to accept e-invoice	0%	6%	44%	33%
Differences between invoicing channel between suppliers and customers	17%	12%	11%	17%
Complex implementation process	50%	24%	0%	33%
Interoperability between service providers	17%	12%	33%	0%
Lack of service providers of e-invoice	17%	0%	56%	50%
No instructions from the government	0%	24%	22%	0%
No challenges	0%	0%	0%	0%



### **Attachment 3. Interview questions.**

#### **Benefits of E-invoices**

- What are the major benefits that companies would get when implementing e-invoice, especially in SMEs?
- I have read some studies and research, and often, the adoption of e-invoice starts externally, that the customers want the company to switch from paper to electronic, not from the fact that the company sees the benefits. What do you think about this? Is it true?
- I had a chance to talk to a small business owner in Finland, and he said that he is strongly against e-invoice system. At the moment, the invoices have so many mistakes and errors, and if he uses e-invoice, those mistakes are likely to be approved. What is your thought about this?
- Currently, in Vietnam, many companies do not see reducing costs as a key benefit of e-invoice but rather a cost to their business, on a ground that they have to invest more into the system, in both labor skills and money. What is your point of view on this issue?

#### **Reasons for paper invoice**

- What do you think are the major reasons that companies are using paper invoice?
- Do you think reluctance to change is one factor that makes those companies rather not using e-invoice?
- What about the security threats: possibility that the invoices are faked or that there would be fraud? The safety of the systems?

#### **Challenges to implement e-invoice**

- What do you think are the challenges to the implementation of e-invoicing to the business?

- Do you see interoperability between service providers as a barrier for e-invoice?
- Billentis’s report on e-billing in global landscape, Vietnam is a laggard in this field.  
In your opinion, which would be the most crucial factor to successfully increase the use of e-invoice?

## **Attachment 4. Questionnaire (in English).**

### **Survey about invoicing practices in Vietnamese firms**

My name is Ngo Minh Hoang and I am the final year student in Haaga-Helia University of Applied Sciences, Helsinki, Finland. I am conducting a bachelor thesis about “the use of e-invoices in Vietnamese firms”. I hope to receive your response for the survey below. The survey includes a maximum of 10 questions and will last for approximately 10 minutes.

All the information and answers that you provided are confidential and will not be used for any other purposes other than for the thesis. Thank you in advance for your help.

1. Which industry the firm is operating in:
  - a. Construction
  - b. Manufacturing
  - c. Retail/wholesales
  - d. Information Technology
  - e. Financial services
  - f. Telecommunications/Media
  - g. Other
2. Size of the company (number of employees)
  - a. Below 10
  - b. From 10 to 99
  - c. From 100 to 199
  - d. From 200 to 299
  - e. 300 and over
3. Location
  - a. North of Vietnam
  - b. South of Vietnam
  - c. Central of Vietnam
4. On average, how many invoices does your company issue per month
  - a. Less than 100

- b. From 100 to 500
  - c. From 500 to 1000
  - d. From 1000 to 5000
  - e. Over 5000
5. On average, how many invoices does your company receive per month
- a. Less than 100
  - b. From 100 to 500
  - c. From 500 to 1000
  - d. From 1000 to 5000
  - e. Over 5000
6. Who are your main customers:
- a. Household customer
  - b. Business customer
  - c. Public sector
7. How familiar are you with e-invoices
- a. We have not heard about e-invoices
  - b. We heard about e-invoices but do not use
  - c. We only send e-invoices
  - d. We only receive e-invoices
  - e. We send and receive e-invoices

If answered a, the survey automatically ends.

If answered b, answer questions number 8-11

If answered c, d, e, answer questions number 12-17

8. How do you print paper invoice?
- a. Company prints its own paper invoice
  - b. Printing invoices is outsourced to a third party
  - c. Use red-invoices from the government
  - d. Scan invoices and send
9. Why is your company still using paper invoices (multiple choices enabled)?
- a. Cheap
  - b. Easy to use
  - c. No extra investment
  - d. Have been using paper invoices for long

- e. The customer does not want e-invoices
  - f. Other, please specify
10. Challenges and barrier to implement e-invoice in your company (multiple choices enabled):
- a. Perceived difficulty to use
  - b. Extra costs to the business
  - c. Constrained budget
  - d. Still want to keep the old system
  - e. Insufficient IT infrastructure
  - f. Lack of business capabilities
  - g. Customer's reluctance to accept e-invoice
  - h. Differences in invoicing channel between suppliers and customers
  - i. Complex implementing process
  - j. Interoperability between service providers
  - k. Lack of service provider of e-invoices
  - l. No instructions from the government
  - m. No challenges
  - n. Other, Please specify
11. Do you have strategies to implement e-invoices in your business?
- a. Yes, within 1-2 years
  - b. Yes, within 3-5 years
  - c. No
  - d. We haven't thought about that yet
12. How do you send/receive electronic invoice
- a. Company's own system
  - b. Through a system of the seller/buyer
  - c. Using a third party system
13. Do you satisfy with the e-invoice system
- a. Very satisfied
  - b. Somehow satisfied
  - c. Somehow unsatisfied
  - d. Very Unsatisfied
14. Percentage of e-invoice in total invoice:
- a. Less than 5%
  - b. From 5% to 19%

- c. From 20% to 49%
- d. Over 50%

15. Key drivers for implementing e-invoice

- a. Strengthen the relationship with customers
- b. Improve working capital management
- c. Improve productivity
- d. Become environmentally friendly
- e. Comply with legal requirements
- f. Cut costs
- g. Improve performance
- h. Other, please specify

16. Benefits of e-invoices

- a. Tight relationship with suppliers and customers
- b. Costs and time saving
- c. Increased productivity
- d. Reducing errors and disputes related to invoices
- e. Improve working capital management
- f. Reducing environmental impact
- g. Other, please specify

17. Challenges and barrier to implement e-invoice in your company (multiple choices enabled):

- a. Perceived difficulty to use
- b. Extra costs to the business
- c. Constrained budget
- d. Still want to keep the old system
- e. Insufficient IT infrastructure
- f. Lack of business capabilities
- g. Customer's reluctance to accept e-invoice
- h. Differences in invoicing channel between suppliers and customers
- i. Complex implementing process
- j. Interoperability between service providers
- k. Lack of service provider of e-invoices
- l. No instructions from the government
- m. No challenges
- n. Other, please specify